

REMARKS

This amendment is responsive to the Final Office Action dated May 31, 2005. Claims 1, 2 and 4 - 15 are pending in this application and have been rejected. Reexamination and reconsideration are respectfully requested in light of the foregoing amendments in the claims and following remarks.

These remarks follow the order of the outstanding Office Action beginning at page 2 thereof.

Amendments in the Claims

Claim 1 has been amended to describe Applicant's invention as set forth in paragraph [0019] found at page 3 in Applicant's specification. The following is a retyped version of [0019] with references to lettered paragraphs in newly presented claim 1 for the Examiner's convenience:

(a) Powder or chips of fragrant wood is processed by heating agitation extraction or by soaking extraction for extracting the essential oil ingredient. After (b) filtering, the extract is (c) obtained by removing the solvent. This extract is (d) heated and the volatized (d) fragrance in the head space is led outside the system. The introduction (d) of inert gas is more suitable. The fragrance ingredient is collected (e) in an absorption solvent which becomes a fragrance collection liquid. By this method, a fragrance ingredient that reproduces the original

fragrance of fragrant wood is obtained. Also, the perfume composition containing this fragrance collection liquid can reproduce the original fragrance of the fragrant wood. Also, the cosmetic containing this fragrance collection liquid can improve the quality of aroma.

Claim Rejections - 35 USC § 112

Claims 1, 2, 4, 12 and 15 are rejected under 35 USC § 112 (second paragraph) as being incomplete for omitting an essential step. The step omitted is "a step indicating the presence of the inert gas in the final collecting step. The original claims did not all require a step of collecting with the inert gas.

As Applicant's specification shows in the working examples 1 - 6, the gas is collected in the absorption solvent. Although the gas passes to the absorption solvent, this does not mean that the gas remains in solution. The inert gas is not collected as the Examiner would require. Instead, gases such as nitrogen clearly have limited solubility in water, or methanol, or ethanol. With the limited solubility, most of the gas will pass out of the liquid and to atmosphere. This is clearly shown in Figure 1 of Applicant's specification where the gas inserted at point (2) passes along with a fragrance ingredient to a connecting pipe (3) and is discharged as a distillate to an absorption solvent (5) located in a collection apparatus (4). The collection apparatus (4) shows a vent to atmosphere. Still further, once the absorption solvent containing perfume and the

gas is removed, the gases will escape in a manner that is well known.

It is, therefore, to be understood that the absorption solvent does not retain the gases which flow through the system except for a very small amount. The inert gas is not collected, it passes through instead.

Claims 5 - 11, 13 and 14 have been rejected under 35 USC § 112(second paragraph) as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner asserts that Applicant has not achieved the presumed goal of trying to set forth a fragrance collection liquid as a component of the perfumes/cosmetic composition. In response, Applicant has now amended the appropriate claims to state that the perfume/cosmetic comprises a fragrance collection liquid. In all cases the word "containing" has been deleted and the more inclusive word "comprising" has been inserted.

Claim 1 has been objected to on the grounds that it recites a fragrance ingredient in line 6. The Examiner questions the antecedent basis. In response, Applicant in amended claim 1 in line **4 refers** to "the" fragrance ingredient which is in line 1.

Claims 1, 2, 4, 12, and 15

These claims were rejected only under 35 USC § 112 (second paragraph) as stated at paragraph number 2, page 2 of the outstanding Office Action. The Examiner states that each of these steps is necessary to clarify the distinctions between the

claimed invention and the prior art reference. However, the Examiner has not applied the prior art reference to previously presented claims 1, 2, 4, 8, 12 and 15. In this paper, Applicant has traversed the required step of indicating the presence of inert gas in the final collecting step on the ground that such a gas would not be collected, as stated above. Therefore, absent a prior art rejection, it is respectfully submitted that these claims should be considered allowable over prior art.

Claim Rejections - 35 USC § 102 - 35 USC § 103

Claims 5, 6, 7, 9, 10, 11, 13, and 14 have been rejected under 35 USC § 102(b) as anticipated by, or in the alternative, under 35 USC § 103(a) as obvious over Bedoukian '096. The Examiner stated that Bedoukian differs from the instantly claimed invention in that the cedar extract is not obtained as recited in the claims. The Examiner, however, rejects these product-by-process claims on the grounds that determination of patentability is based upon the product. The Examiner further states that Bedoukian differs from the instantly claimed composition in that it does not recite the presence of a fragrance collection liquid. The Examiner then pointed out that the claims at issue, do not clearly set forth that the fragrance collection liquid is a component of the composition. In response, Applicant has now amended claims 5, 9, 13 and 14 to change the word "containing" to the word "comprising". This places within the independent claims the collection liquid from claim 1. Claim 1 states that the

product obtained is a fragrance collection liquid. Therefore, the product as now claimed comprises the fragrance collection liquid and the rejection has been overcome.

Claims 5, 6, 7, 8, 9, 10, 11, 13 and 14 have been rejected under 35 USC § 102(b) as anticipated by or in the alternative under 35 USC § 103(a) as obvious over Nagashima '982. This rejection is essentially the same as the rejection based upon Bedoukian, and notes that patentability of a product does not depend upon its method of production.

The Examiner notes that Nagashima differs from the claimed composition in that it does not recite the presence of a fragrance collection liquid. Applicant's amendment in claims 5, 9, 13 and 14 stating that the claimed subject matter comprises the fragrance collection liquid overcomes the rejection because the fragrance collection liquid is now claimed as a component of the composition.

Claims 5, 6, 7, 9, 10, 11, 13, and 14 have been rejected under 35 USC § 102(b) as anticipated or, in the alternative, under 35 USC § 103(a) as obvious over Mookherjee '006. This rejection is respectfully traversed for the reasons which follow. The Examiner's attention is respectfully invited to MPEP § 2144.09, that portion which relates to compounds which have no utility or utility only as intermediaries. A copy is attached for the Examiner's convenience. Applicant respectfully submits that the Examiner has failed to make out a *prima facie* case of obviousness because there is no motivation for one of ordinary

skill in the art to make the reference compounds. The compound disclosed in '006 that the Examiner relies upon is clearly an intermediary compound and there is no motivation for making this compound much less combining with a cosmetic or perfume as the claims require. Since there is no motivation for making the intermediate, it is not a reference under 35 USC § 102 or 35 USC § 103 because 35 USC § 101 requires inventions to be useful. The Examiner places reliance paragraph [0022] found on page 4 of the specification. The Examiner relies upon the Abstract which teaches that a fragrance composition is produced by means of first quantitatively and qualitatively substantially continuously analyzing the aroma omitted and rates of admission of components thereof from wood components of living trees. Then, according to the Abstract, there is provision of at least the major aroma components found in at least one of the analysis and admixing the results to form a fragrance composition. This step, however, is not creation of the complete fragrance as collected by Applicant's method. Instead, it is a selection of only major components. The Abstract first does not suggest Applicant's invention, and secondly, the first portion of the Abstract relating to quantitatively and qualitatively analyzing the aroma relates to an aroma which is only an intermediate product. In column 7, lines 67 to column 8, line 11 there is disclosed fragrance and components of the invention which are used with perfumes. However, the invention according to '006 is the analysis of a true tree extract as shown in Table 1, column 20,

and then based upon the analysis depicted in Table 1, Example 2 uses only the major components of the analysis. Similarly, Examples 3, 4, etc. all use only a few of the components of the fragrance in creating a fragrance formulation in accordance with the invention of '006.

As Examples 2, 3 and 4 at column 21 show, the '006 invention is not Applicant's compound. Instead, is it limited to a few major components which may be used to simulate. Clearly, the product of '006 when mixed with alcohol is not the same as Applicant's product. Applicant's product is the product produced in accordance with claim 1 which is incorporated into claims 5 - 8 and 9 - 11.

In claims 13 and 14, Applicant states that the cosmetic comprises the fragrance liquid which collects the fragrance ingredient by means of the method of collection . . . This is not the case in '006 where the fragrance is a simulation as illustrated in Examples 2, 3, and 4, of column 21.

In the portion of the MPEP provided above, Applicant respectfully submits that the Examiner should note that one of ordinary skill in the art would not have been motivated to stop the reference synthesis use the intermediate compound. Instead, the reference teaches analysis of the compound and selection only of its major components for insertion into a synthetically created compound for use in perfumes. There is no motivation or recognized utility for the intermediate compound in '006.

Lacking a teaching of utility, there simply is not invention suggested or taught '006.

In view of the foregoing, it is respectfully submitted that the application is now in condition for allowance, and early action in accordance thereof is requested. In the event there is any reason why the application cannot be allowed in this current condition, it is respectfully requested that the Examiner contact the undersigned at the number listed below to resolve any problems by Interview or Examiner's Amendment.

Respectfully submitted,



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2144.09 Close Structural Similarity Between Chemical Compounds (Homologs, Analogues, Isomers)

REJECTION BASED ON CLOSE STRUCTURAL SIMILARITY IS FOUNDED ON THE EXPECTATION THAT COMPOUNDS SIMILAR IN STRUCTURE WILL HAVE SIMILAR PROPERTIES

A *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. "An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (discussed in more detail below) and *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991) (discussed below and in MPEP § 2144) for an extensive review of the case law pertaining to obviousness based on close structural similarity of chemical compounds. See also MPEP § 2144.08, paragraph II.A.4.(c).

HOMOLOGY AND ISOMERISM ARE FACTS WHICH MUST BE CONSIDERED WITH ALL OTHER RELEVANT FACTS IN DETERMINING OBVIOUSNESS

Compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH₂- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). See also *In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978) (stereoisomers *prima facie* obvious).

Isomers having the same empirical formula but different structures are not necessarily considered equivalent by chemists skilled in the art and therefore are not necessarily suggestive of each other. *Ex parte Mowry*, 91 USPQ 219 (Bd. App. 1950) (claimed

cyclohexylstyrene not *prima facie* obvious over prior art isohexylstyrene). Similarly, homologs which are far removed from adjacent homologs may not be expected to have similar properties. *In re Mills*, 281 F.2d 218, 126 USPQ 513 (CCPA 1960) (prior art disclosure of C₈ to C₁₂ alkyl sulfates was not sufficient to render *prima facie* obvious claimed C₁ alkyl sulfate).

Homology and isomerism involve close structural similarity which must be considered with all other relevant facts in determining the issue of obviousness. *In re Mills*, 281 F.2d 218, 126 USPQ 513 (CCPA 1960); *In re Wiecherl*, 370 F.2d 927, 152 USPQ 247 (CCPA 1967). Homology should not be automatically equated with *prima facie* obviousness because the claimed invention and the prior art must each be viewed "as a whole." *In re Langer*, 465 F.2d 896, 175 USPQ 169 (CCPA 1972) (Claims to a polymerization process using a sterically hindered amine were held unobvious over a similar prior art process because the prior art disclosed a large number of unhindered amines and only one sterically hindered amine (which differed from a claimed amine by 3 carbon atoms), and therefore the reference as a whole did not apprise the ordinary artisan of the significance of hindered amines as a class.).

PRESENCE OF A TRUE HOMOLOGOUS OR ISOMERIC RELATIONSHIP IS NOT CONTROLLING

Prior art structures do not have to be true homologs or isomers to render structurally similar compounds *prima facie* obvious. *In re Payne*, 606 F.2d 303, 203 USPQ 245 (CCPA 1979) (Claimed and prior art compounds were both directed to heterocyclic carbamoyloximino compounds having pesticidal activity. The only structural difference between the claimed and prior art compounds was that the ring structures of the claimed compounds had two carbon atoms between two sulfur atoms whereas the prior art ring structures had either one or three carbon atoms between two sulfur atoms. The court held that although the prior art compounds were not true homologs or isomers of the claimed compounds, the similarity between the chemical structures and properties is sufficiently close that one of ordinary skill in the art would have been motivated to make the claimed compounds in searching for new pesticides.).

See also *In re Mayne*, 104 F.3d 1339, 41 USPQ2d 1451 (Fed. Cir. 1997) (claimed protein was held to be obvious in light of structural similarities to the prior art, including known structural similarity of Ile and Lev); *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986) (claimed and prior art compounds used in a method of treating depression would have been expected to have similar activity because the structural difference between the compounds involved a known bioisosteric replacement) (see MPEP § 2144.08, paragraph II.A.4(c) for a more detailed discussion of the facts in the *Mayne* and *Merck* cases); *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991) (The tri-orthoester fuel compositions of the prior art and the claimed tetra-orthoester fuel compositions would have been expected to have similar properties based on close structural and chemical similarity between the orthoesters and the fact that both the prior art and applicant used the orthoesters as fuel additives.) (See MPEP § 2144 for a more detailed discussion of the facts in the *Dillon* case.).

Compare *In re Grabiak*, 769 F.2d 729, 226 USPQ 871 (Fed. Cir. 1985) (substitution of a thioester group for an ester group in an herbicidal safener compound was not suggested by the prior art); *In re Bell*, 991 F.2d 781, 26 USPQ2d 1529 (Fed. Cir. 1993) (The established relationship between a nucleic acid and the protein it encodes in the genetic code does not render a gene *prima facie* obvious over its corresponding protein in the same way that closely related structures in chemistry may create a *prima facie* case because there are a vast number of nucleotide sequences that might encode for a specific protein as a result of degeneracy in the genetic code (i.e., the fact that most amino acids are specified by more than one nucleotide sequence or codon.); *In re Deuel*, 51 F.3d 1552, 1558-59, 34 USPQ2d 1210, 1215 (Fed. Cir. 1995) ("A prior art disclosure of the amino acid sequence of a protein does not necessarily render particular DNA molecules encoding the protein obvious because the redundancy of the genetic code permits one to hypothesize an enormous number of DNA sequences coding for the protein." The existence of a general method of gene cloning in the prior art is not sufficient, without more, to render obvious a particular cDNA molecule.).

PRESENCE OR ABSENCE OF PRIOR ART SUGGESTION OF METHOD OF MAKING A CLAIMED COMPOUND MAY BE RELEVANT IN DETERMINING *PRIMA FACIE* OBVIOUSNESS

"[T]he presence—or absence—of a suitably operative, obvious process for making a composition of matter may have an ultimate bearing on whether that composition is obvious—or nonobvious—under 35 U.S.C. 103." *In re Maloney*, 411 F.2d 1321, 1323, 162 USPQ 98, 100 (CCPA 1969).

"[I]f the prior art of record fails to disclose or render obvious a method for making a claimed compound, at the time the invention was made, it may not be legally concluded that the compound itself is in the possession of the public. In this context, we say that the absence of a known or obvious process for making the claimed compounds overcomes a presumption that the compounds are obvious, based on the close relationships between their structures and those of prior art compounds." *In re Hoeksema*, 399 F.2d 269, 274-75, 158 USPQ 597, 601 (CCPA 1968).

See *In re Payne*, 606 F.2d 303, 203 USPQ 245 (CCPA 1979) for a general discussion of circumstances under which the prior art suggests methods for making novel compounds which are of close structural similarity to compounds known in the prior art. In the biotechnology arts, the existence of a general method of gene cloning in the prior art is not sufficient, without more, to render obvious a particular cDNA molecule. *In re Deuel*, 51 F.3d 1552, 1558, 34 USPQ2d 1210, 1215 (Fed. Cir. 1995) ("[T]he existence of a general method of isolating cDNA or DNA molecules is essentially irrelevant to the question whether the specific molecules themselves would have been obvious, in the absence of other prior art that suggests the claimed DNAs."); *In re Bell*, 991 F.2d 781, 785, 26 USPQ2d 1529, 1532 (Fed. Cir. 1993). However, it may be proper to apply "methodology in rejecting product claims under 35 U.S.C. 103, depending on the particular facts of the case, the manner and context in which methodology applies, and the overall logic of the rejection." *Ex parte Goldgaber*, 41 USPQ2d 1172, 1176 (Bd. Pat. App. & Inter. 1996).

PRESUMPTION OF OBVIOUSNESS BASED ON STRUCTURAL SIMILARITY IS OVERCOME WHERE THERE IS NO REASONABLE EXPECTATION OF SIMILAR PROPERTIES

The presumption of obviousness based on a reference disclosing structurally similar compounds may be overcome where there is evidence showing there is no reasonable expectation of similar properties in structurally similar compounds. *In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978) (appellant produced sufficient evidence to establish a substantial degree of unpredictability in the pertinent art area, and thereby rebutted the presumption that structurally similar compounds have similar properties); *In re Schechter*, 205 F.2d 185, 98 USPQ 144 (CCPA 1953). See also *Ex parte Blattner*, 2 USPQ2d 2047 (Bd. Pat. App. & Inter. 1987) (Claims directed to compounds containing a 7-membered ring were rejected as *prima facie* obvious over a reference which taught 5- and 6-membered ring homologs of the claimed compounds. The Board reversed the rejection because the prior art taught that the compounds containing a 5-membered ring possessed the opposite utility of the compounds containing the 6-membered ring, undermining the examiner's asserted *prima facie* case arising from an expectation of similar results in the claimed compounds which contain a 7-membered ring.).

IF PRIOR ART COMPOUNDS HAVE NO UTILITY, OR UTILITY ONLY AS INTERMEDIATES, CLAIMED STRUCTURALLY SIMILAR COMPOUNDS MAY NOT BE *PRIMA FACIE* OBVIOUS OVER THE PRIOR ART

If the prior art does not teach any specific or significant utility for the disclosed compounds, then the prior art is not sufficient to render structurally similar claims *prima facie* obvious because there is no motivation for one of ordinary skill in the art to make the reference compounds, much less any structurally related compounds. *In re Stemniski*, 444 F.2d 581, 170 USPQ 343 (CCPA 1971).

Where structurally similar "prior art compounds 'cannot be regarded as useful' for the sole use disclosed [by the reference],... a person having ordinary skill in the art would lack the 'necessary impetus' to make the claimed compounds." *In re Albrecht*, 514 F.2d 1389, 1396, 185 USPQ 585, 590 (CCPA 1975) (prior art reference studied the local anesthetic activ-

ity of various compounds, and taught that compounds structurally similar to those claimed were irritating to human skin and therefore "cannot be regarded as useful anesthetics." 514 F.2d at 1393, 185 USPQ at 587).

Similarly, if the prior art merely discloses compounds as intermediates in the production of a final product, one of ordinary skill in the art would not have been motivated to stop the reference synthesis and investigate the intermediate compounds with an expectation of arriving at claimed compounds which have different uses. *In re Lalu*, 747 F.2d 703, 223 USPQ 1257 (Fed. Cir. 1984).

PRIMA FACIE CASE REBUTTABLE BY EVIDENCE OF SUPERIOR OR UNEXPECTED RESULTS

A *prima facie* case of obviousness based on structural similarity is rebuttable by proof that the claimed compounds possess unexpectedly advantageous or superior properties. *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (Affidavit evidence which showed that claimed triethylated compounds possessed anti-inflammatory activity whereas prior art trimethylated compounds did not was sufficient to overcome obviousness rejection based on the homologous relationship between the prior art and claimed compounds.); *In re Wiechert*, 370 F.2d 927, 152 USPQ 247 (CCPA 1967) (a 7-fold improvement of activity over the prior art held sufficient to rebut *prima facie* obviousness based on close structural similarity).

However, a claimed compound may be obvious because it was suggested by, or structurally similar to, a prior art compound even though a particular benefit of the claimed compound asserted by patentee is not expressly disclosed in the prior art. It is the differences in fact in their respective properties which are determinative of nonobviousness. If the prior art compound does in fact possess a particular benefit, even though the benefit is not recognized in the prior art, applicant's recognition of the benefit is not in itself sufficient to distinguish the claimed compound from the prior art. *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991).

See MPEP § 716.02 - § 716.02(g) for a discussion of evidence alleging unexpectedly advantageous or superior results.